ARCH CREEK STRUCTURE

G-58

This structure is a four-barreled corrugated metal pipe culvert located on Arch Creek immediately downstream from the Florida East Coast Railroad bridge.

PURPOSE

This structure maintains optimum upstream water control stages in Arch Creek; it passes the design flood (60% of the Standard Project Flood) without exceeding upstream flood design stage; and restricts downstream flood stages and discharge velocities to non-damaging levels; and it prevents saline intrusion during periods of high flood tides.

OPERATION

This structure will be operated to maintain headwater stage of 1.8 feet when sufficient water is available to maintain this level.

This objective will be achieved by automatic settings on #2, #3, and #4 as follows:

When the headwater elevation rises to 2.0 feet, the gate will begin to open at six inches per minute;

When the headwater elevation rises or falls to 1.8 feet, the gate will become stationary;

When the headwater elevation falls to 1.4 feet, the gate will begin to close at six inches per minute.

FLOOD DISCHARGE CHARACTERISTICS

	Design Flood
Discharge Rate	300 cfs
	60 % SPF
Headwater Elevation	1.6 feet
Tailwater Elevation	1.1 feet
Type Discharge	uncontrolled submerged

DESCRIPTION OF STRUCTURE

Type Corrugated metal pipe culverts with upstream control

Number of barrels 4

Size of barrels 1 - 60 inches

3 - 72 inches

Length of barrels 173, 190, 207 and 224 feet

Flow line elevations -7.0 feet

Service bridge elevations 5.8 feet

Water surface elevation which will by-pass structure 9.0 feet

Gates

Number 4 upstream end, 4 downstream end

Type sluice upstream end, flap downstream end

Size 72" diameter for #1, #2, #3; 60" diameter for #4

Control Manual for #1; automatic for #2, #3, and #4

Lifting Mechanism

Normal Power Source Commercial electricity

Emergency Power Source LP gas driven generator

Type Hoist Electric motor

ACCESS: Structure located on N.E. 135th Street in North Miami Beach

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level Recorder: Upstream telemetry recorder

Gate Position Recorder: Telemetry recorder at Gate #2, #3, and #4

DEWATERING FACILITIES None